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DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
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GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

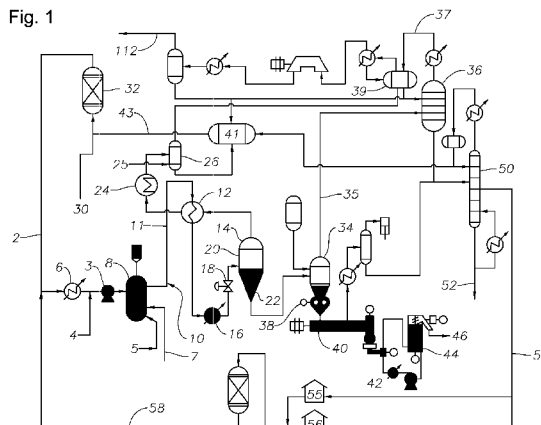
- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

[Continued on next page]

(54) Title: PROCESSES AND APPARATUS FOR POLYMER FINISHING AND PACKAGING



(57) Abstract: Provided are apparatus and methods relating to the finishing line of a continuous solution polymerization plant. In one aspect, an apparatus includes a pelletizer having cooling liquid, e.g., water or aqueous solution, into which is added a pelletization aid. In another aspect, the apparatus comprises means to remove residual polymer particles from the pelletizer cooling liquid. In a further aspect, the apparatus comprises conduits of at least 50 m in length for carrying propellant cooling liquid from the pelletizer to a drying apparatus. The residence time of the pellets in the cooling liquid may be 10 seconds or more. In a further aspect, a drying apparatus is provided for the pellets which comprises first and second drying zones. In a further aspect, a pneumatic conveyor is provided for carrying pellets to a packaging apparatus. In a further aspect, a packaging apparatus is provided comprising a blender silo.

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INTERNATIONAL SEARCH REPORT

International application No PCT/US2010/061106

A. CLASSIFICATION OF SUBJECT MATTER

INV. B29B9/16 B29B13/10 B01D21/00 B29B13/06
 ADD. B29B9/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 B29B B01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 126 836 A (DING JIAN [CA] ET AL) 3 October 2000 (2000-10-03)	1
Y	column 3, line 58 - column 6, line 12 figures	2

X	EP 0 695 719 A1 (YEH GEORGE C [US]) 7 February 1996 (1996-02-07) page 5, line 56 - page 6, line 30 figures 1-3	1

X	US 3 207 818 A (MARSHALL DONALD I) 21 September 1965 (1965-09-21)	1
A	column 2, line 9 - column 4, line 3 figure	2

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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

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05/09/2011

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 522 395 A2 (EASTMAN CHEM CO [US]) 13 April 2005 (2005-04-13) paragraph [0091] paragraph [0097] - paragraph [0104] figure 2	2
A	----- WO 2006/077214 A1 (M & G POLIMERI ITALIA SPA [IT]; RICHARDSON DELANE N [US]; SISSON EDWIN) 27 July 2006 (2006-07-27) page 2, line 17 - line 27 page 4, line 3 - line 7	2
A	----- US 2 862 243 A (FARR JOHN WILLIAM FREDERICK [GB] ET AL) 2 December 1958 (1958-12-02) claim 1 figure -----	1,2

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/061106

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1, 2

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 2

an apparatus for removing residual polymer particles from a pelletizer cooling liquid and a corresponding method.

2. claims: 3-5

a pelletizer and drying apparatus having separated by a conduit having a length of at least 50 meters. A corresponding polymerization plant and a corresponding process.

3. claims: 6, 7

a drying apparatus for drying polymer pellets and a corresponding method.

4. claims: 8, 9

a plant comprising a conveyor for conveying polymer pellets from a dusting apparatus to a packaging apparatus and a corresponding method.

5. claims: 10-13

a pelletizing and packaging apparatus comprising a blender silo and a corresponding method.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2010/061106

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
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